Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADF								
ADSEP								
ADVASC								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2

Comments: Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	3.0 PL Science Appl	1	0	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	3.0 PL Science Appl	1	0	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2

Comments: Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Included in Operations Overview (see 5.0). Preferred Time Frame is L-7.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	5.0 PL Operations Overview	1	.5	I-12 to I-6	SSTF/PTC	Lecture	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2

Comments: Includes Science Background, Science Applications, and Systems Overview. Preferred Time Frame is L-7. All classes taught together.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	5.0 PL Operations Overview	1	.5	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
		Includes Science Background, Science Applications, and Systems Overview. Preferred Time Frame is L-7. All classes taught together.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	6.0 PL Nominal Operations	1	.5	I-12 to I-6	SSTF/PTC	Hands-On Demonstration	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Preferred Time Frame is L-7. All classes taught together.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	6.0 PL Nominal Operations	1	.5	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Preferred Time Frame is L-7. All classes taught together.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	7.0 PL Malfunction Ops	1	.5	I-12 to I-6	SSTF/PTC	Hands-On Demonstration	28 Vdc Power Supply Power Cable ADVASC Control Cable ADVASC Sensor Cable ADVASC-GC Trainer ADVASC-SS Trainer Air Line Condensate Fluid Syringe Condensate Sample Bag 1 Data Disks Ethernet Data/Video Cable Gas Sample Bag 1 Gas Syringe Nutrient Exchange Bag 1 (Spent) Nutrient Exchange Bag 2 (Fresh) Nutrient Fluid Syringe 1 Nutrient Fluid Syringe 2
	Comments: Preferred Time Frame is L-7. All classes taught together.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ADVASC	Advanced Astroculture	7.0 PL Malfunction Ops	1	.5	I-12 to I-6	SSTF/PTC		Nutrient Sample Bag 1
	Preferred Time Frame is L-7. All classes taught together.							
	Advanced Astroculture	8.0 PL Transfer	1	0				
	Comments: Unpowered ascent/descent. Transfer should be rountine and training should be done as part of generic transfer training activity. Interfaces covered in System Overview.							
	Advanced Astroculture	9.0 PL Transport	1	0				
	Comments: Unpowered on ascent/descent no training required. Activation occurs after transfer.							
ADVASC-2								
ADVASC-3								
AMS								
AMS-P								
APCF								
ARCTIC								
ARIS-ICE								
BCSS								
BPS								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BPS	BPS	5.0 PL Operations Overview	1	1	I-12 to I-6	SSTF/PTC	Lecture	BPS Trainer
	Comments:	This is the entire BPS overview This overview will need to be given to the ascent crew, if Increment crew does not launch with hardware This overview will need to be given to the descent crew, if Increment crew does not return with hardware Instructor: PD (Ali Branson) 8A shuttle to receive Overview.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BPS	BPS	6.0 PL Nominal Operations	1	6	I-12 to I-6	SSTF/PTC	Hands-On	BPS Trainer
	Comments: Session 1 is a Nom Ops demonstration/preformance session. Instructor: PD (Ali Branson)						Demonstration	CO2 Cylinder Assembly Calibration Kit Data/Program Disk Film Kit Fixation Kit GN2 Freezer Insert Assembly GSE Support Stand Gas Collection Kit Gas Sample Storage Kit Harvest Kit Liquid Collection Kit Liquid Sample Storage Kit Photography Grid Pollination Kit Root Module Kit Water Refill Kit Water Storage Kit

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BPS	BPS	8.0 PL Transfer	1	1	I-6 to I-3	SSTF/PTC	Hands-On	BPS Trainer
	Comments:	This session will be given to the ascent crew.					Demonstration	
		This session will be given to the descent crew.						
		8A shuttle crew will be trained.						
	BPS	9.0 PL Transport	1	1	I-12 to I-6	SSTF/PTC	Hands-On	BPS Trainer
	Comments:	This session will be given to the ascent crew					Demonstration	
		This session will be given to the descent crew						
		If Increment crew trained on hardware launches or returns with hardware, only .5 hours is required. 8A crew to receive training.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BPS	BPS	6.0 PL Nominal Operations	2	5	I-12 to I-6	SSTF/PTC	Hands-On	BPS Trainer
	Comments:	Session 2 is taught 2 days after Nom Ops session #1. Using the same procedures as Nom Ops session #1, the crew member preforms procedures with help from the PD only when crew requested. Instructor: PD (Ali Branson)						CO2 Cylinder Assembly Calibration Kit Data/Program Disk Film Kit Fixation Kit GN2 Freezer Insert Assembly GSE Support Stand Gas Collection Kit Gas Sample Storage Kit Harvest Kit Liquid Collection Kit Liquid Sample Storage Kit Photography Grid Pollination Kit Root Module Kit Water Refill Kit Water Storage Kit

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BPS	BPS	6.0 PL Nominal Operations	3	.5	I-12 to I-6	SSTF/PTC	Demonstration	BPS Trainer
	Comments:	Session 3 is a Alt Ops demonstration/preformance session. Instructor: PD (Ali Branson)					Hands-On	
	BPS	6.0 PL Nominal Operations	4	.5	I-12 to I-6	SSTF/PTC	Hands-On	BPS Trainer
	Comments:	Session #4 is taught 2 days after session #3. Using the same procedures as the first Alt Ops (session #3), the crew member preforms procedures with help from the PD only when crew requested. Instructor: PD (Ali Branson)						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BPS	BPS	6.0 PL Nominal Operations	5	4.5	I-12 to I-6	SSTF/PTC	Hands-On	BPS Trainer
	Comments:	Session #5 is a Proficiency lesson to occur within 6 months of Nom Ops Sessions 1-4 and within 6 months of flight Instructor: PD (Ali Branson)						CO2 Cylinder Assembly Calibration Kit Film Kit Fixation Kit GN2 Freezer Insert Assembly GSE Support Stand Gas Collection Kit Gas Sample Storage Kit Harvest Kit Liquid Collection Kit Liquid Sample Storage Kit Photography Grid Pollination Kit Root Module Kit Water Refill Kit Water Storage Kit
BSTC	BSTC-UF1	2.0 PL Science Background	1	1.5	I-12 to I-6	PDC	Lecture	BCSS 01
	Comments:	Training for Prime Only. As opportunity arises, plan to do refresher training. Note a 3 month refresher training is recommended. Training start date: I-11						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BSTC	BSTC-UF1	3.0 PL Science Appl	1	.75	I-12 to I-6	PDC	Hands-On	BCSS 01
	Comments:	Training for Prime only. Training start date per delta TST: I-7. As opportunity arises to do refresher training, a 3 month refresher is recommended. Interval no more that 2 sessions per week.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	4.0 PL Systems Overview	1	1	I-12 to I-6	PDC	Lecture	BSTC
	Comments:	Training Start date: I-11. As opportunity arises, plan to do refresher training. Note a 3 month refresher training is recommended Generic requires Safety only Includes curriculum of 5.0					Demonstration	BTR
								GSM
	BSTC-UF1	5.0 PL Operations Overview	1	1	I-12 to I-6	PDC	Demonstration	BCSS 01
	Comments:	Curriculum trained with 4.0 As opportunity arises, plan to do refresher training. Note a 3 month refresher training is recommended					Hands-On	BCSS 04
								BSTC
								BTR
								GSM
	BSTC-UF1	6.0 PL Nominal Operations	1	1	I-12 to I-6	PDC	Hands-On	BCSS 01
	Comments:	Training for Prime only. Interval between sessions: no more than 2 sessions per week Interval (currency) for All sessions: every 3 months. Training start date: I-7					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BSTC	BSTC-UF1	7.0 PL Malfunction Ops	1	.75	I-12 to I-6	PDC	Hands-On	BCSS 01
	Comments:	Training start: I-7. This class includes Biotechnology Refrigerator Malfunctions, as well as the Biotechnology Specimen Temperature Controller Malfunctions. A few procedures are taught that are representative of all mals and correctives.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	8.0 PL Transfer	1	0				
	Comments:	Units are being transfered within EXP Rack #4.						
	BSTC-UF1	9.0 PL Transport	1	0				
	Comments:	BSTCs will be transported in the MPLM within EXP Rack #4.						
	BSTC-UF1	3.0 PL Science Appl	2	1	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Training for Prime Only. Training start date per delta TST: I-7. As opportunity arises to do refresher training, a 3 month refresher is recommended. Interval no more that 2 sessions per week.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	6.0 PL Nominal Operations	2	1.5	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime only. Interval between sessions: no more than 2 sessions per week Interval (currency) for All sessions: every 3 months. Training start date: I-7					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BSTC	BSTC-UF1	3.0 PL Science Appl	3	1.5	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime only. Training Start Date per delta TST: I-7. As opportunity arises to do refresher training, a 3 month refresher is recommended. Interval no more that 2 sessions per week.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	6.0 PL Nominal Operations	3	1	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime only. Interval between sessions: no more than 2 sessions per week Interval (currency) for All sessions: every 3 months.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	3.0 PL Science Appl	4	.75	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime Only. Trainign start date per delta TST: I-7. As opportunity arises to do refresher training, a 3 month refresher is recommended. Interval no more that 2 sessions per week.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	6.0 PL Nominal Operations	4	2	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime only. Interval between sessions: no more than 2 sessions per week Interval (currency) for All sessions: every 3 months.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BSTC	BSTC-UF1	3.0 PL Science Appl	5	1	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime only. Training start date per delta TST: I-7. As opportunity arises to do refresher training, a 3 month refresher is recommended. Interval no more that 2 sessions per week.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	6.0 PL Nominal Operations	5	1.5	I-6 to I-3	PDC	Hands-On	BCSS 01
	Comments:	Proficiency: Prime only. Interval between sessions: no more than 2 sessions per week Interval (currency) for All sessions: every 3 months.					Lecture	BCSS 04
							Demonstration	BSTC
								BTR
								GSM
	BSTC-UF1	6.0 PL Nominal Operations	6	2	I-6 to I-3	PDC	Demonstration	BCSS 01
	Comments:	Proficiency: Prime only. Interval between sessions: no more than 2 sessions per week Interval (currency) for All sessions: every 3 months.					Hands-On	BCSS 04
							Lecture	BSTC
								BTR
								GSM
	BSTC-UF1	7.0 PL Malfunction Ops					Hands-On	
	Comments:	Proficiency: Prime only.					Lecture	
							Demonstration	
BTR	BTR-UF1	2.0 PL Science Background	1	0				
	Comments:	Not Required						
	BTR-UF1	3.0 PL Science Appl	1	0				
	Comments:	Not Required						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
BTR	BTR-UF1	4.0 PL Systems Overview	1	.5	I-12 to I-6	PDC	Lecture	BTR
	Comments: Preferred Training date:I-11 Includes curriculum from 5.0						Hands-On	
	BTR-UF1	5.0 PL Operations Overview	1	0	I-12 to I-6	PDC	Hands-On	BTR
	Comments: Curriculum included in 4.0						Lecture	
	BTR-UF1	6.0 PL Nominal Operations	1	0	I-12 to I-6	PDC	Hands-On	BTR
	Comments: Training start date: I-7 For Prime Only Included in BSTC Nom Ops Session 1						Lecture	
	BTR-UF1	7.0 PL Malfunction Ops	1	0	I-12 to I-6	PDC	Hands-On	BTR
	Comments: Training start date: I-7 Included in BSTC Malfunctions Class						Lecture	
	BTR-UF1	8.0 PL Transfer	1	1	I-6 to I-3	PDC	Hands-On	BTR
	Comments: Shuttle crew is assumed. UF1 and 8A shuttle crews in plan to be trained. Prime ISS crew is also in plan to be trained.						Lecture	
	BTR-UF1	9.0 PL Transport	1	1	I-6 to I-3	PDC	Hands-On	BTR
	Comments: Given to Shuttle crew. Prime ISS, UF1 and 8A shuttle crew in plan to be trained.						Lecture	
CBIX								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CCM								
CGBA								
CGBA-2								
CGBA-3	Commercial Generic Bioprocessing Apparatus	2.0 PL Science Background	1	1.5	I-6 to I-3	Other	Self-Study Self-Study Lecture Hands-On	CGBA-ICM Trainer
	Comments: Sections 2.0, 4.0, 5.0, and 6.0 will be covered in the same session. Training will be conducted via Hands-on method which will incorporate a handout for Self Study and a brief lecture portion to cover key science concepts necessary to conduct operations properly. In the future (for example for Refresh or Proficiency) training could be conducted via CBT (development in process). As a backup, training could also be done via Videocon. Also note: CGBA-4 and CGBA-5 on Inc4 will be trained in conjunction with CGBA-3.							
	Commercial Generic Bioprocessing Apparatus	3.0 PL Science Appl	1	0				
	Comments: Not Applicable							
	Commercial Generic Bioprocessing Apparatus	4.0 PL Systems Overview	1	0	I-6 to I-3	Other	Self-Study Lecture	
	Comments: Trained with Section 2.0							
	Commercial Generic Bioprocessing Apparatus	5.0 PL Operations Overview	1	0	I-6 to I-3	Other	Self-Study Lecture	
	Comments: Trained with Section 2.0.							
	Commercial Generic Bioprocessing Apparatus	6.0 PL Nominal Operations	1	0	I-6 to I-3	SSTF/PTC	Self-Study Demonstration Hands-On	CGBA-ICM Trainer
	Comments: Trained with Section 2.0.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CGBA-3	Commercial Generic Bioprocessing Apparatus	7.0 PL Malfunction Ops	1	0	I-6 to I-3	SSTF/PTC		
	Comments: Not applicable							
	Commercial Generic Bioprocessing Apparatus	8.0 PL Transfer	1	0				
	Comments: Not applicable at the PD level. Transfer will be covered as part of the generic ISS transfer training.							
	Commercial Generic Bioprocessing Apparatus	9.0 PL Transport	1	.5	I-6 to I-3	SSTF/PTC	Self-Study Lecture Demonstration Hands-On	
	Comments: Applicable to ascent and descent crews only. CBT will be preferred method (CBT currently under development). If CBT not available, then a combination of Lecture, and Hands-on methods will be used during one session covering all materials.							
CGBA-4								
CGBA-5								
CLMMF								
CPBF								
CPCG-H #1	Commercial Protein Crystal Growth	2.0 PL Science Background	1	2	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: This initial science training session will give the crew members a brief overview fo the CPCG program. It will detail the objectives of the experiment with background in the CPCG research and commericial activites underway at UAB.							
	Commercial Protein Crystal Growth	3.0 PL Science Appl	1					
	Comments: N/A							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CPCG-H #1	Commercial Protein Crystal Growth	4.0 PL Systems Overview	1		I-12 to I-6	SSTF/PTC	Lecture	
	Comments: This session will be combined with the Science Overview Session to give the Crew the science overview as well as a familization of the equipment and how it works.							
	Commercial Protein Crystal Growth	5.0 PL Operations Overview	1		I-12 to I-6	SSTF/PTC	Lecture	
	Comments: This overview will be included in the Science Familization and Hardware overview training session.							
	Commercial Protein Crystal Growth	6.0 PL Nominal Operations	1	1.5	I-12 to I-6	SSTF/PTC	Demonstration Demonstration Hands-On Hands-On Hands-On	CPCG-H Tray Assembly CRIM Mock-up CRIM Simulator
	Comments:							
	Commercial Protein Crystal Growth	7.0 PL Malfunction Ops	1	1	I-12 to I-6	SSTF/PTC	Demonstration Demonstration Hands-On Hands-On	CRIM Mock-up CRIM Simulator
	Comments:							
	Commercial Protein Crystal Growth	8.0 PL Transfer	1		I-12 to I-6	SSTF/PTC	Demonstration Hands-On	CRIM Mock-up
	Comments: Transfer Operations will be discussed in the CPCG-H Overview Presentation. Hands-on transfer training will be performed during generic locker transfer sessions performed by PTC training personnel.							
	Commercial Protein Crystal Growth	9.0 PL Transport	1	.5	I-12 to I-6	SSTF/PTC	Demonstration Hands-On	CRIM Mock-up
	Comments: Shuttle crew training ISS Prime crew and 8A shuttle crew in plan to be trained.							
CPCG-H #2	Commecial Protein Crystal Growth	2.0 PL Science Background	1	2	I-12 to I-6	SSTF/PTC	Self-Study	
	Comments: This initial science training session will give the crew members a brief overview of the CPCG program. It will detail the objectives of the experiment with background in the PCG research and commercial activities underway at UAB.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CPCG-H #2	Commecial Protein Crystal Growth	3.0 PL Science Appl	1					
	Comments: N/A							
	Commecial Protein Crystal Growth	4.0 PL Systems Overview	1		I-12 to I-6	SSTF/PTC	Lecture	
	Comments: This session will be combined with the Science Overview Session to give the crew the science overview as well as a familization of the equipment and how it works							
	Commecial Protein Crystal Growth	5.0 PL Operations Overview	1		I-12 to I-6	SSTF/PTC	Lecture	
	Comments: This overview will be included in the Science Familization and Hardware overview training session.							
	Commecial Protein Crystal Growth	6.0 PL Nominal Operations	1	1.5	I-12 to I-6	SSTF/PTC	Demonstration Demonstration Demonstration Hands-On Hands-On Hands-On	CRIM Mock-up CRIM Simulator HDPCG Tray Assembly
	Comments:							
	Commecial Protein Crystal Growth	7.0 PL Malfunction Ops	1	1	I-12 to I-6	SSTF/PTC	Hands-On Hands-On Demonstration Demonstration	CRIM Mock-up CRIM Simulator
	Comments:							
	Commecial Protein Crystal Growth	8.0 PL Transfer	1		I-12 to I-6	SSTF/PTC	Hands-On Demonstration	CRIM Mock-up
	Comments: Transfer Operations will be discussed in the CPCG-H Overview Presentation. Hands-on Transfer training will be performed during generic locker transfer sessions performed by PTC training personnel.							
	Commecial Protein Crystal Growth	9.0 PL Transport	1	.5	I-12 to I-6	SSTF/PTC	Hands-On Demonstration	CRIM Mock-up
	Comments: Shuttle crew training. ISS Prime crew and 8A shuttle crew in plan to be trained							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
CPCG-V								
DCPCG								
DCPCG-2								
DF								
DREAMTiME								
DT								
EGN	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	2.0 PL Science Background	1	.25	I-3 to Increment Start		Self-Study	
	Comments: The PCG-EGN payload is a passive stowage payload that requires crew interaction for transfer to and from the ISS.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	3.0 PL Science Appl	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require science application training.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	4.0 PL Systems Overview	1	.25	I-3 to Increment Start		Self-Study	
	Comments: The PCG-EGN payload is a passive stowage payload that requires crew interaction for transfer to and from the ISS.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	5.0 PL Operations Overview	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require operations overview training.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
EGN								
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	6.0 PL Nominal Operations	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require nominal operations training.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	7.0 PL Malfunction Ops	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require malfunction operationst training.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	8.0 PL Transfer	1	.25	I-3 to Increment Start		Self-Study	
	Comments: The PCG-EGN payload is a passive stowage payload that requires crew interaction for transfer to and from the ISS.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	9.0 PL Transport	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require transport training.							
	Protein Crystal Growth Enhanced Gaseous Nitrogen Dewar	10.0 Baseline Data Collection	1					
	Comments: The PCG-EGN is a passive stowage payload and does not require baseline data collection training.							
EMCS								
EPO-4								
ESTER								
ETR								
EXP-1								
	Empty EXPRESS Rack	1.0 PL/Facility Overview	1	1	I-18 to I-12	SSTF/PTC	Lecture	
	Comments: PD will provide first-time instructor; PTC will provide instructor for subsequent sessions.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
EXP-1	Empty EXPRESS Rack	6.0 PL Nominal Operations	1	1.5	I-18 to I-12	SSTF/PTC	Hands-On	EXPRESS Laptop
	Comments: PDC will provide first-time instructor; PTC will provide instructor for subsequent sessions. EXPRESS OV and Noms taught together.						Lecture	EXPRESS Rack Mockup ISIS Drawer ISPR Interface Panel Instructor Console Middeck Locker Middeck Locker Mounting Tool Utility Drawer
	Empty EXPRESS Rack	7.0 PL Malfunction Ops	1	1	I-12 to I-6	SSTF/PTC	Hands-On	EXPRESS Laptop
	Comments: Alternative and Mal procedures							EXPRESS Rack Mockup ISIS Drawer Instructor Console Middeck Locker Middeck Locker Mounting Tool Utility Drawer
	Empty EXPRESS Rack	8.0 PL Transfer	1					
	Comments: It is assumed that generic ISPR transfer training will adequately address EXPRESS transfer.							
	Empty EXPRESS Rack	9.0 PL Transport	1					
	Comments: Expect that generic ISPR training will cover this training							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
EXP-1	Empty EXPRESS Rack	7.0 PL Malfunction Ops	2	2	I-12 to I-6	SSMTF	Hands-On	AEIMT EXPRESS Laptop EXPRESS Rack Mockup ISIS Drawer
	Comments: This session is for ORU On Orbit Replacement Units only if a unit breaks would this training be necessary It utilizes the AEIMT Trainer							
EXP-17A.1								
EXP-2	ARIS	1.0 PL/Facility Overview	1	.5	I-12 to I-6	SSTF/PTC	Lecture	Classroom
	Comments: Payload familiarization lesson for ARIS system.							
	ARIS	6.0 PL Nominal Operations	1	1	I-12 to I-6	SSTF/PTC	Hands-On Demonstration	Active Rack Isolation System (ARIS Software Simulator)
	Comments: Lesson covers ARIS nominal operations, safety, and actuator adjustment. ARIS OV and Noms taught together.							
EXP-27A.1								
EXP-3								
EXP-4								
EXP-5								
EXP-6								
EXP-SAMPLE								
EXPSUB1								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
EXPSUB2								
EXPSUB3								
EXPSUB4								
EXPSUB5								
EarthKAM								
EarthKAM-W								
End-To-End								
ExP								
FCU								
FOCUS								
GLAD								
GRC-TSC								
GSM								
HRF	EVARM	6.0 PL Nominal Operations	1	1	I-12 to I-6	PDC	Hands-On Lecture Demonstration	Experiment Unique Equipment
	Comments: Nom ops training session for all three crewmembers.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	EVARM	6.0 PL Nominal Operations	2	.25	I-3 to Increment Start	PDC	Hands-On	EVARM Experiment hardware
	Comments:	Proficiency lesson, if desired by crewmember. May be integrated with other proficiency lessons and/or in a simulation.						
	EVARM	6.0 PL Nominal Operations	3	.5	Onboard	Onboard	Self-Study	
	Comments:	Onboard training for all three crewmembers.						
	GASMAP	6.0 PL Nominal Operations	1	2	I-12 to I-6	PDC	Demonstration Lecture Hands-On	GASMAP Human Research Facility Rack
	Comments:	Nom ops training for all crewmembers.						
	GASMAP	6.0 PL Nominal Operations	2	1	I-6 to I-3	PDC	Hands-On	GASMAP
	Comments:	Proficiency training for all three crewmembers.						
	GASMAP	6.0 PL Nominal Operations	3	.5	Onboard	Onboard	Self-Study	
	Comments:	On-board training for all crew.						
	H-REFLEX	2.0 PL Science Background	1	2.25	I-18 to I-12	PDC	Lecture	Experiment Unique Equipment PC Laptop
	Comments:	Science background and ops overview for participating crewmembers.						
	H-REFLEX	6.0 PL Nominal Operations	1	2	I-18 to I-12	PDC	Lecture Demonstration	Experiment Unique Equipment PC Laptop
	Comments:	Nom ops training for participating crewmembers. Hreflex OV and Noms #1 taught together						
	H-REFLEX	10.0 Baseline Data Collection	1	.75	I-3 to Increment Start	Other		Experiment Unique Equipment PC Laptop
	Comments:	I-3 BDC for participating crewmembers.						
	H-REFLEX	6.0 PL Nominal Operations	2	1.25	I-12 to I-6	PDC	Hands-On Lecture	Experiment Unique Equipment PC Laptop
	Comments:	Nom ops training for participating crewmembers.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	H-REFLEX	10.0 Baseline Data Collection	2	.75	I-3 to Increment Start	Other		Experiment Unique Equipment PC Laptop
	Comments:	I-2 BDC for participating crewmembers.						
	H-REFLEX	6.0 PL Nominal Operations	3	1.25	I-6 to I-3	PDC	Hands-On	Experiment Unique Equipment PC Laptop
	Comments:	Nom ops training for participating crewmembers.						
	H-REFLEX	10.0 Baseline Data Collection	3	.75	I-3 to Increment Start	Other		Experiment Unique Equipment PC Laptop
	Comments:	I-1 BDC for participating crewmembers.						
	H-REFLEX	6.0 PL Nominal Operations	4	1	Onboard	Onboard	Self-Study	Experiment Unique Equipment PC Laptop
	Comments:	Onboard training for participating crewmembers.						
	H-REFLEX	10.0 Baseline Data Collection	4	.5		Other		Experiment Unique Equipment PC Laptop
	Comments:	R+0 days BDC for participating crewmembers.						
	H-REFLEX	10.0 Baseline Data Collection	5	.5		Other		Experiment Unique Equipment PC Laptop
	Comments:	R+1 day BDC for participating crewmembers.						
	H-REFLEX	10.0 Baseline Data Collection	6	.5		Other		Experiment Unique Equipment PC Laptop
	Comments:	R+3 days BDC for participating crewmembers.						
	H-REFLEX	10.0 Baseline Data Collection	7	.5		Other		Experiment Unique Equipment PC Laptop
	Comments:	R+5 days BDC for participating crewmembers.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	HRF PC	5.0 PL Operations Overview	1	1	I-18 to I-12	PDC	Hands-On Lecture Self-Study	PC Laptop Workstation
	Comments:	Ops overview for all three crewmembers. HRF PC and Workstation used in this session. Fulfills PC and Workstation Ops OV requirement. Hasn't this class been combined with the HRF Rack OV/Nom class?						
	HRF PC	6.0 PL Nominal Operations	1	3.5	I-12 to I-6	PDC	Hands-On Demonstration	PC Laptop Workstation
	Comments:	HRF PC and Workstation used in this session. Fulfills PC and Workstation Nom Ops requirement. Hasn't this class been combined with the HRF Rack OV/Nom class?						
	HRF PC	6.0 PL Nominal Operations	2	1	I-3 to Increment Start	PDC	Hands-On	PC Laptop Workstation
	Comments:	Proficiency training for all three crewmembers. HRF PC and Workstation used in this session. Fulfills PC and Workstation Prof. requirement.						
	HRF Rack	6.0 PL Nominal Operations	1	1	I-18 to I-12	PDC	Self-Study Hands-On Demonstration	GASMAP Human Research Facility Rack PC Laptop Workstation
	Comments:	HRF Rack Nom Ops for all three crewmembers. HRF Rack Noms Ops covers PC/WS OV/Noms in one class.						
	HRF Rack	6.0 PL Nominal Operations	2	.5	I-3 to Increment Start	PDC	Hands-On	Human Research Facility Rack
	Comments:	Proficiency training for all three crewmembers. HRF Rack Nom Prof covers PC/WS prof also.						
	Increment Overview	2.0 PL Science Background	1	7	I-18 to I-12	PDC	Lecture	
	Comments:	Increment Science Background and Informed Consent for all three crewmembers.						

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	Increment Overview	5.0 PL Operations Overview	1	2.5	I-18 to I-12	PDC	Demonstration Hands-On	Ambulatory Data Acquisition System GASMAP Human Research Facility Rack PC Laptop Sample Collection Kit Total Force - Foot Ground Interface Ultrasound Workstation
	Comments: HRF Increment Hardware overview to all three crewmembers.							
	Interactions (E096)	2.0 PL Science Background	1	2	I-3 to Increment Start	PDC	Lecture Demonstration	Experiment Unique Equipment PC Laptop
	Comments: Science background and Nom Ops session for all three crewmembers.							
	Interactions (E096)	6.0 PL Nominal Operations	1	.25	Onboard	Onboard	Self-Study	
	Comments: On-orbit refresher.							
	Interactions (E096)	10.0 Baseline Data Collection	1	2	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments: Four preflight BDC sessions at 30 minutes each, once a week for 4 weeks.							
	Interactions (E096)	10.0 Baseline Data Collection	2	1		Other		
	Comments: Two 30-minute postflight BDC sessions.							
	PuFF (E044)	6.0 PL Nominal Operations	1	3.5	I-12 to I-6	PDC	Lecture Demonstration	Experiment Unique Equipment GASMAP
	Comments: Nom Ops training session for all three crewmembers.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	PuFF (E044)	10.0 Baseline Data Collection	1	2.5	I-6 to I-3	Other		Experiment Unique Equipment
	Comments:	Preflight BDC for all three crewmembers at I-4.						
	PuFF (E044)	6.0 PL Nominal Operations	2	1.5	I-12 to I-6	PDC	Hands-On	Experiment Unique Equipment
	Comments:	Nom Ops training session for all three crewmembers.					Demonstration	GASMAP
	PuFF (E044)	10.0 Baseline Data Collection	2	2	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments:	Preflight BDC for all three crewmembers at I-3.						
	PuFF (E044)	6.0 PL Nominal Operations	3	2.5	I-6 to I-3	PDC	Hands-On	Experiment Unique Equipment
	Comments:	Nom Ops training session for all three crewmembers..						GASMAP
	PuFF (E044)	10.0 Baseline Data Collection	3	1.5	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments:	Preflight BDC for all three crewmembers at I-2.						
	PuFF (E044)	6.0 PL Nominal Operations	4	2	Onboard	Onboard	Self-Study	
	Comments:	On-orbit training session for all three crewmembers. (4 Sessions at .5 hrs. each)						
	PuFF (E044)	10.0 Baseline Data Collection	4	1.5	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments:	Preflight BDC for all three crewmembers at I-1.						
	PuFF (E044)	10.0 Baseline Data Collection	5	5.5		Other		Experiment Unique Equipment
	Comments:	Postflight BDC for all three crewmembers.						GASMAP
								Human Research Facility Rack
								PC Laptop

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	Renal Stone (E057)	6.0 PL Nominal Operations	1	2	I-6 to I-3	PDC	Lecture Demonstration	Experiment Unique Equipment Sample Collection Kit
	Comments: Nom ops training session for all three crewmembers.							
	Renal Stone (E057)	10.0 Baseline Data Collection	1	2.42	I-6 to I-3	Other		Experiment Unique Equipment
	Comments: Preflight BDC for all three crewmembers at I-195 to I-190 days. Includes urine collection and 4 days of D/F/F/M log.							
	Renal Stone (E057)	6.0 PL Nominal Operations	2	1	I-3 to Increment Start	PDC	Lecture Hands-On	Experiment Unique Equipment Sample Collection Kit
	Comments: Proficiency training for all three crewmembers.							
	Renal Stone (E057)	10.0 Baseline Data Collection	2	1.17	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments: Preflight BDC for all three crewmembers at I-61 to I-60 days. Includes urine collection and 2 days of D/F/F/M log.							
	Renal Stone (E057)	6.0 PL Nominal Operations	3	.5	Onboard	Onboard	Self-Study	
	Comments: On-orbit training for all three crewmembers.							
	Renal Stone (E057)	10.0 Baseline Data Collection	3	1.17	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments: Preflight BDC for all three crewmembers at I-11 to I-10 days. May combine 24 hour urine with Med Ops requirements, reducing time to 0.5 hrs; 2 days D/F/F/M log.							
	Renal Stone (E057)	10.0 Baseline Data Collection	4	.08	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments: Preflight BDC for all three crewmembers at I-3 days to launch for all three crewmembers. Ingesting the potassium citrate/placebo pills will take 5 min. TOTAL for the 3 days, which breaks down to approx. 1.5 min/day.							
	Renal Stone (E057)	10.0 Baseline Data Collection	5	.25		Other		Experiment Unique Equipment
	Comments: Postflight BDC for all three crewmembers at R+0 to R+14. Ingesting the potassium citrate/placebo pills will take 15 min. TOTAL for the 14 days, which breaks down to approx. 1 min/day.							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	Renal Stone (E057)	10.0 Baseline Data Collection	6	2.75		Other		
	Comments: Postflight BDC for all three crewmembers at R+0 to R+2. May combine 24 hour urine with Med Ops requirements on R+0, reducing time to 2.1 hrs; 3 days D/F/F/M log.							
	Renal Stone (E057)	10.0 Baseline Data Collection	7	1.17		Other		Experiment Unique Equipment
	Comments: Postflight BDC for all three crewmembers at R+6 to 7. Urine collection; 2 days D/F/F/M log.							
	Renal Stone (E057)	10.0 Baseline Data Collection	8	1.17		Other		Experiment Unique Equipment
	Comments: Postflight BDC for all three crewmembers at R+13 to 14. Urine collection; 2 days D/F/F/M log.							
	Subregional Bone (E343)	10.0 Baseline Data Collection	1	3.8		Other		Experiment Unique Equipment
	Comments: Preflight BDC I-360 to 10 days for all three crewmembers. One occurrence, anywhere from I-1year.							
	Subregional Bone (E343)	10.0 Baseline Data Collection	2	3.8		Other		Experiment Unique Equipment
	Comments: R+0 to 2 weeks for all three crewmembers.							
	Subregional Bone (E343)	10.0 Baseline Data Collection	3	3.8		Other		Experiment Unique Equipment
	Comments: R+1year for all three crewmembers.							
	TV/Photo Ops	5.0 PL Operations Overview	1	.5	I-12 to I-6	PDC	Demonstration	
	Comments: Training on HRF specific TV/Photo requirements/scenarios. ISS TV/Photo Class is a preferred prerequisite.						Lecture	
	Ultrasound	6.0 PL Nominal Operations	1	2.5	I-12 to I-6	PDC	Hands-On	Human Research Facility Rack
	Comments: Requirement to train a prime and backup crewmember.							PC Laptop
								Ultrasound
								Workstation

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF	Ultrasound	6.0 PL Nominal Operations	2	1	I-3 to Increment Start	PDC	Hands-On	Human Research Facility Rack PC Laptop Ultrasound Workstation
	Comments: Proficiency session.							
	Ultrasound	6.0 PL Nominal Operations	3	1	Onboard	Onboard	Self-Study	PC Laptop
	Comments: On-orbit training.							
	Workstation	5.0 PL Operations Overview	1		I-18 to I-12	PDC	Hands-On Lecture	Workstation
	Comments: Ops overview training for all three crewmembers. This session is done in conjunction with the HRF PC Overview class and the hours are covered under HRF PC.							
	Workstation	6.0 PL Nominal Operations	1		I-12 to I-6	PDC	Lecture Demonstration	Workstation
	Comments: Combined session with PC Nom Ops (Common Software) for all three crewmembers. This session is done in conjunction with the HRF PC Nom Ops class and the hours are covered under HRF PC.							
	Workstation	6.0 PL Nominal Operations	2		I-3 to Increment Start	PDC	Hands-On	Workstation
	Comments: Session for all three crewmembers. This session is done in conjunction with the HRF PC Proficiency class and the hours are covered under HRF PC.							
	Workstation	6.0 PL Nominal Operations	3	1	Onboard	Onboard	Hands-On Hands-On	Workstation
	Comments: On-board training session for all three crewmembers.							
	XENON 1 (E290)	10.0 Baseline Data Collection	1	1	I-3 to Increment Start	Other		Experiment Unique Equipment
	Comments: Preflight BDC for all three crewmembers at I-1.							
	XENON 1 (E290)	10.0 Baseline Data Collection	2	1		Other		Experiment Unique Equipment
	Comments: Postflight BDC for all three crewmembers at R+1 day.							

HRF IFPR

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
HRF2								
ICT Dry Run								
IH								
JSC-TSC								
KuBRS								
LTMPF								
MACE II								
MAMS	Microgravity Acceleration Measurement System	4.0 PL Systems Overview	1	.5	I-18 to I-12		Self-Study	
	Comments: It is anticipated that the only training requirement for MAMS is to provide a brief payload familiarization handout.							
MELFI								
MEPS	MEPS-02	2.0 PL Science Background	1		I-30 to I-18	PDC	Hands-On	MEPS II
	Comments: Included in 6.0, Payload Nominal Operations						Lecture	Data Capture Kit
	MEPS-02	3.0 PL Science Appl	1		I-12 to I-6	PDC	Hands-On	MEPS II
	Comments: Included in 6.0 Payload Nominal Operatopns							Data Capture Kit
	MEPS-02	4.0 PL Systems Overview	1		I-12 to I-6	PDC	Hands-On	MEPS II
	Comments: Included in 6.0 Payload Nominal Operatopns							Data Capture Kit

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
MEPS	MEPS-02	5.0 PL Operations Overview	1		I-12 to I-6	PDC	Hands-On	MEPS II
	Comments:	Included in 6.0 Payload Nominal Operatopns						Data Capture Kit
	MEPS-02	6.0 PL Nominal Operations	1	1.5	I-12 to I-6	PDC	Hands-On	MEPS II
	Comments:	MEPS Overview, Nom Ops and Malfunctions are taught in one course.						Data Capture Kit
	MEPS-02	7.0 PL Malfunction Ops	1		I-18 to I-12	PDC	Hands-On	MEPS II
	Comments:	Included in 6.0 Payload Nominal Operatopns						Data Capture Kit
MGBX								
MISSE								
MSFC-TSC								
MSG								
MSRR-1								
NLO-PTFG								
NLO-PVT								
OPCGA								
PCG-BAG								
PCG-STES								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PCG-STES	PCG-STES	2.0 PL Science Background	1	1	I-12 to I-6	SSTF/PTC	Lecture	DCAM trainer EDCAM Trainer PCAM Trainer PCG-STES Trainer VDA-2 Trainer
	Comments:	Science background pitch is 1 hour, STES facility (Nom Ops) pitch is 1 hour, and internal payload (P/L Overview) pitch (PCAM, DCAM, EDCAM, VDA-2) is 1 hour. Grand Total: 3 hours						
	PCG-STES	3.0 PL Science Appl	1					
	Comments:	N/A						
	PCG-STES	4.0 PL Systems Overview	1	1	I-12 to I-6	SSTF/PTC	Lecture Demonstration Hands-On	DCAM trainer EDCAM Trainer PCAM Trainer PCG-STES Trainer VDA-2 Trainer
	Comments:	Science background pitch is 1 hour, STES facility (Nom Ops) pitch is 1 hour, and internal payload (P/L Overview) pitch (PCAM, DCAM, EDCAM, VDA-2) is 1 hour. Grand Total: 3 hours. Handout materials will be provided.						
	PCG-STES	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC		
	Comments:							
	PCG-STES	6.0 PL Nominal Operations	1	1	I-12 to I-6	SSTF/PTC	Demonstration Hands-On	DCAM trainer EDCAM Trainer PCAM Trainer PCG-STES Trainer VDA-2 Trainer
	Comments:	Science background pitch is 1 hour, STES facility (Nom Ops) pitch is 1 hour, and internal payload (P/L Overview) pitch (PCAM, DCAM, EDCAM, VDA-2) is 1 hour. Grand Total: 3 hours						
	PCG-STES	7.0 PL Malfunction Ops	1	0	I-12 to I-6	SSTF/PTC		
	Comments:							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PCG-STES	PCG-STES	8.0 PL Transfer	1	0	I-6 to I-3	SSTF/PTC		
	Comments: Time required to complete transfer training is counted separately from the 3 hours included in this training data set.							
	PCG-STES	9.0 PL Transport	1	0	I-3 to Increment Start	SSTF/PTC		
	Comments:							
	PCG-STES	10.0 Baseline Data Collection	1					
	Comments: N/A							
PCS	PCS	2.0 PL Science Background	1	.75	I-12 to I-6	SSTF/PTC	Self-Study	
	Comments: 2.0, 4.0 and 5.0 taught together.						Lecture	
	PCS	3.0 PL Science Appl	1	0				
	Comments:							
	PCS	4.0 PL Systems Overview	1	.75	I-12 to I-6	SSTF/PTC	Self-Study	PCS Avionics Section
	Comments: 2.0, 4.0 and 5.0 taught together.						Lecture	PCS Test Section
							Demonstration	Software Simulator
	PCS	5.0 PL Operations Overview	1	1	I-12 to I-6	SSTF/PTC	Self-Study	PCS Avionics Section
	Comments: 2.0, 4.0 and 5.0 taught together.						Lecture	PCS Test Section
								Software Simulator
	PCS	6.0 PL Nominal Operations	1	2.5	I-12 to I-6	SSTF/PTC	Self-Study	PCS Avionics Section
	Comments: 6.0, 7.0 and 8.0 are taught together.						Hands-On	PCS Test Section
							Lecture	Software Simulator

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PCS	PCS	7.0 PL Malfunction Ops	1	.5	I-12 to I-6	SSTF/PTC	Self-Study Lecture	PCS Avionics Section PCS Test Section Software Simulator
	Comments: 6.0, 7.0 and 8.0 are taught together.							
	PCS	8.0 PL Transfer	1	.5	I-12 to I-6	SSTF/PTC	Self-Study Hands-On Lecture	PCS Avionics Section PCS Test Section
	Comments: 6.0, 7.0 and 8.0 are taught together.							
	PCS	9.0 PL Transport	1	0				
	Comments:							
PDS	PDS	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: Should be trained with any identified user on Increment 4. This would require adding 2 hours to increment training for a single user on the increment. Included in Section 4.0							
	PDS	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC	Demonstration	PNTD Holders (Plastic nuclear track detectors in holders) PNTD Supply/Return Kit TLD Kit TLD Reader Kit TLD-Reader TLDs (Thermo-luminiscent detectors)
	Comments: To be trained with identified user on Increment 4. This course combines 2.0, 4.0 and 5.0 into an overview which takes 1 hour.							
	PDS	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: To be trained with any identified user on increment 4 Included in 4.0							

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PDS	PDS	6.0 PL Nominal Operations	1	0	I-12 to I-6	SSTF/PTC	Hands-On	PNTD Holders (Plastic nuclear track detectors in holders) PNTD Supply/Return Kit TLD Kit TLD Reader Kit TLD-Reader TLDs (Thermo-luminiscent detectors)
	Comments:	To be trained with any identified user on Increment 4. Experiment using PDS will determine currency requirements as it relates to the experiment training						
	PDS	6.0 PL Nominal Operations					Hands-On	PNTD Holders (Plastic nuclear track detectors in holders) PNTD Supply/Return Kit TLD Kit TLD Reader Kit TLD-Reader TLDs (Thermo-luminiscent detectors)
	Comments:	This is a proficiency building training. Training hours have been incorporated in HRF-RAD3 training input.						
PEI								
PERS								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
PERS	Click New to create a record.	6.0 PL Nominal Operations	1	.5	I-30 to I-18	SSMTF	Hands-On	Belly Pack
	Comments:							H-Strap
								Laptop Restraint Belt (LRB)
								Single Strap
								Tool Pages - Generic Tool Page - ARIS Tool Page
PGBA								
PSCP								
RWPS								
S*T*A*R*S								
SAMS II	SAMS II, Interim Control Unit	2.0 PL Science Background	1	0	I-12 to I-6	SSTF/PTC	Lecture	
	Comments: Included in 6.0, PL Nominal Operations.							
	SAMS II, Interim Control Unit	3.0 PL Science Appl	1	0				
	Comments: not applicable to SAMS II							
	SAMS II, Interim Control Unit	4.0 PL Systems Overview	1	0	I-12 to I-6	SSTF/PTC		ICU Drawer
	Comments: Included in 6.0 PL Nominal Operations							ICU laptop
								RTS Drawer

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
SAMS II	SAMS II, Interim Control Unit	5.0 PL Operations Overview	1	0	I-12 to I-6	SSTF/PTC		ICU Drawer ICU laptop RTS Drawer
	Comments: Included in 6.0 PL Nominal Operations.							
	SAMS II, Interim Control Unit	6.0 PL Nominal Operations	1	2	I-12 to I-6	SSTF/PTC	Demonstration Hands-On	ICU Drawer ICU laptop RTS Drawer
	Comments: SAMS II has no time frame requirement for training. We assume the Express Rack template is being followed.							
	SAMS II, Interim Control Unit	8.0 PL Transfer	1	0				
	Comments: Assume transfer training will be done by Express Rack							
	SAMS II, Interim Control Unit	9.0 PL Transport	1	0				
	Comments: no crew training required for SAMS II							
SPHERES								
SkySat								
Space DRUMS								
Vulcan- TP/PDA								
WORF								
WPRAC								
WPRAC2								
WSF1								

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	2.0 PL Science Background	1		I-12 to I-6	Other	Lecture	
	Comments: Included in 4.0							
	ZCG Furnace Unit	3.0 PL Science Appl	1					
	Comments: Included in 4.0							
	ZCG Furnace Unit	4.0 PL Systems Overview	1	2	I-12 to I-6	SSTF/PTC	Lecture	Actuators
	Comments: This session includes overviews of Science, Hardware, Systems, and Operations.						Lecture	Autoclave units
							Demonstration	Batteries
								Power Strip
								Recharger
								Screwdrivers
	ZCG Furnace Unit	5.0 PL Operations Overview	1		I-12 to I-6	SSTF/PTC	Lecture	
	Comments: Included in 4.0						Lecture	
							Demonstration	
							Demonstration	

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	6.0 PL Nominal Operations	1	3	I-12 to I-6	SSTF/PTC	Hands-On	Actuators Autoclave units Batteries EXPRESS Laptop Power Cable IZECS to Furnace Module Cable IZECS to Laptop Cable Improved ZCG Experiment Control System (IZECS) Laptop w/Display and simulator software Power Strip Recharger Screwdrivers ZCG Furnace Module (W/4 Bolts) ZCG Mounting Plate iZECS Power Cable (to Power Strip)

Comments: Prefer L-10 and L-3 time frames. Would like to have one session with the simulator integrated into the EXPRESS rack simulator.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	7.0 PL Malfunction Ops	1	1	I-12 to I-6	SSTF/PTC	Hands-On	Actuators
	Comments: Prefer L-10 and L-3 time frames.							Autoclave units
								Batteries
								EXPRESS Laptop Power Cable
								IZECS to Furnace Module Cable
								IZECS to Laptop Cable
								Improved ZCG Experiment Control System (IZECS)
								Laptop w/Display and simulator software
								Power Strip
								Recharger
								Screwdrivers
								ZCG Furnace Module (W/4 Bolts)
								ZCG Mounting Plate
								iZECS Power Cable (to Power Strip)

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	6.0 PL Nominal Operations	2	2.5	I-6 to I-3	SSTF/PTC	Hands-On	Actuators Autoclave units Batteries EXPRESS Laptop Power Cable IZECS to Furnace Module Cable IZECS to Laptop Cable Improved ZCG Experiment Control System (IZECS) Laptop w/Display and simulator software Power Strip Recharger Screwdrivers ZCG Furnace Module (W/4 Bolts) ZCG Mounting Plate iZECS Power Cable (to Power Strip)

Comments: Prefer L-10 and L-3 time frames. Would like to have one session with the simulator integrated into the EXPRESS rack simulator.

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	7.0 PL Malfunction Ops	2	1	I-6 to I-3	SSTF/PTC	Hands-On	Actuators
	Comments: This is a proficiency class.							Autoclave units
								Batteries
								EXPRESS Laptop Power Cable
								IZECS to Furnace Module Cable
								IZECS to Laptop Cable
								Improved ZCG Experiment Control System (IZECS)
								Laptop w/Display and simulator software
								Power Strip
								Recharger
								Screwdrivers
								ZCG Furnace Module (W/4 Bolts)
								ZCG Mounting Plate
								iZECS Power Cable (to Power Strip)

Time Frame(s) ALL

Location(s) ALL

Session Name(s) ALL

TRAINING REQUIREMENTS SUMMARY

INCREMENT ISS-4

PL Acronym	Payload Sub-Element	Session Objective Name	Session	Session Hrs	Time Frame	Location	Method	Training Units
ZCG	ZCG Furnace Unit	7.0 PL Malfunction Ops	3	.5	I-6 to I-3	SSTF/PTC	Hands-On	Actuators Autoclave units Batteries EXPRESS Laptop Power Cable IZECS to Furnace Module Cable IZECS to Laptop Cable Improved ZCG Experiment Control System (IZECS) Laptop w/Display and simulator software Power Strip Recharger Screwdrivers ZCG Furnace Module (W/4 Bolts) ZCG Mounting Plate iZECS Power Cable (to Power Strip)
	Comments: This is a required class that can be taught in conjunction with Session 1, but it is prefered to have it taught in conjunction with Session 2 as close to launch as possible.							
g-LIMIT								